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FOREST PEST MANAGEMENT

3430 BIOLOGICAL EVALUATION
R2-84-10

BARK BEETLE EVALUATION
OF SANBORN PARK AREA
UNCOMPAHGRE NATIONAL FOREST
March 1985

United States
Department of
Agriculture

Forest Service

Forest Pest Management
Denver, Colorado

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March 1985

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INTRODUCTION

Mortality of ponderosa pine by bark beetles has been observed in the vicinity of Sanborn Park in the Uncompahgre National Forest since 1980. An intensive salvage sale effort has been conducted since 1981. The Horsefly Timber Sale was originally offered as one sale but ultimately had to be sold as a series of small commercial timber sales which are approximately 70 percent completed. The gross acreage of the sale area is approximately 2,500 acres and encompasses the east quadrant of the private land comprising Sanborn Park.

Despite the salvage and timber sale efforts by Ouray Ranger District, private landowner perception was that current action was inadequate.

In response to these concerns, a biological evaluation was conducted in the Sanborn Park area during November 1984 by Entomologists Ken Lister and Curtis O'Neil; Deidre Haneman, Biological Technician; Cynthia Brown, David Miller and Hallie Hotchkiss, Biological Aids (seasonals).

OBJECTIVES

The objectives of this biological evaluation were to:

1. Estimate the current, recent, and expected loss of ponderosa pine caused by bark beetles surrounding Sanborn Park.

2. Identify the species of bark beetles causing the loss.

3. Identify prevention and suppression measures appropriate to the particular resource management objectives.

4. Recommend a specific management strategy.

SURVEY PROCEDURES AND METHODOLOGY

Bark beetle infested and dead ponderosa were examined after bark removal to train the surveyors and determine the attacking bark beetle species involved. The current infestation and previous mortality caused by bark beetle infestation was estimated by strip cruise survey lines (1/2 chain wide) and reconnaissance.

Stage II printouts (Appendix B) were obtained for most stands sampled by strip cruise for comparisons. Intensive reconnaissance was conducted in the timber sale to observe and assess the effect of the cutting treatment on the infestations.

Data taken within the 1/2 chain-wide strips were DBH of all bark beetle infested (1984) and standing dead trees killed by the three bark beetle species. No attempt was made to categorize the infested or dead trees by the individual bark beetle species; mountain pine beetle (MPB), roundheaded pine beetle (RHPB), and western pine beetle (WPB). Dead trees were tallied for the bark beetle attacks that have occurred from 1980 through 1983.

Since field time was limited, the cruise lines were run on USFS land along the west, south, and northeast portions of the Sanborn Park private lands (Figure 1). Therefore, the sampling was not truly random, but was biased to be near the private land. A total of 434 chains was sampled for a total sample of 21.95 acres.

To assess the relationship of the infestation within an ongoing timber sale, an intensive reconnaissance was conducted in timber sale units 3B and 4A within the Horsefly Timber Sale area (Figure 2). A reconnaissance was also conducted along the south side of Sanborn Park between the road and Clay Creek in addition to a strip cruise on the south side of Clay Creek.

Stage II survey printouts (Appendix B) were obtained for 12 of the stands sampled by strip survey. Stage II data was not available for all the stands surveyed. However, for the stands for which data was available, the data was averaged for comparison to the mortality data obtained through the strip cruise survey. The Stage II data was also used to predict the tree loss for the outbreak period using Lessard's prediction model for MPB (Technical Report R2-26, 1981).

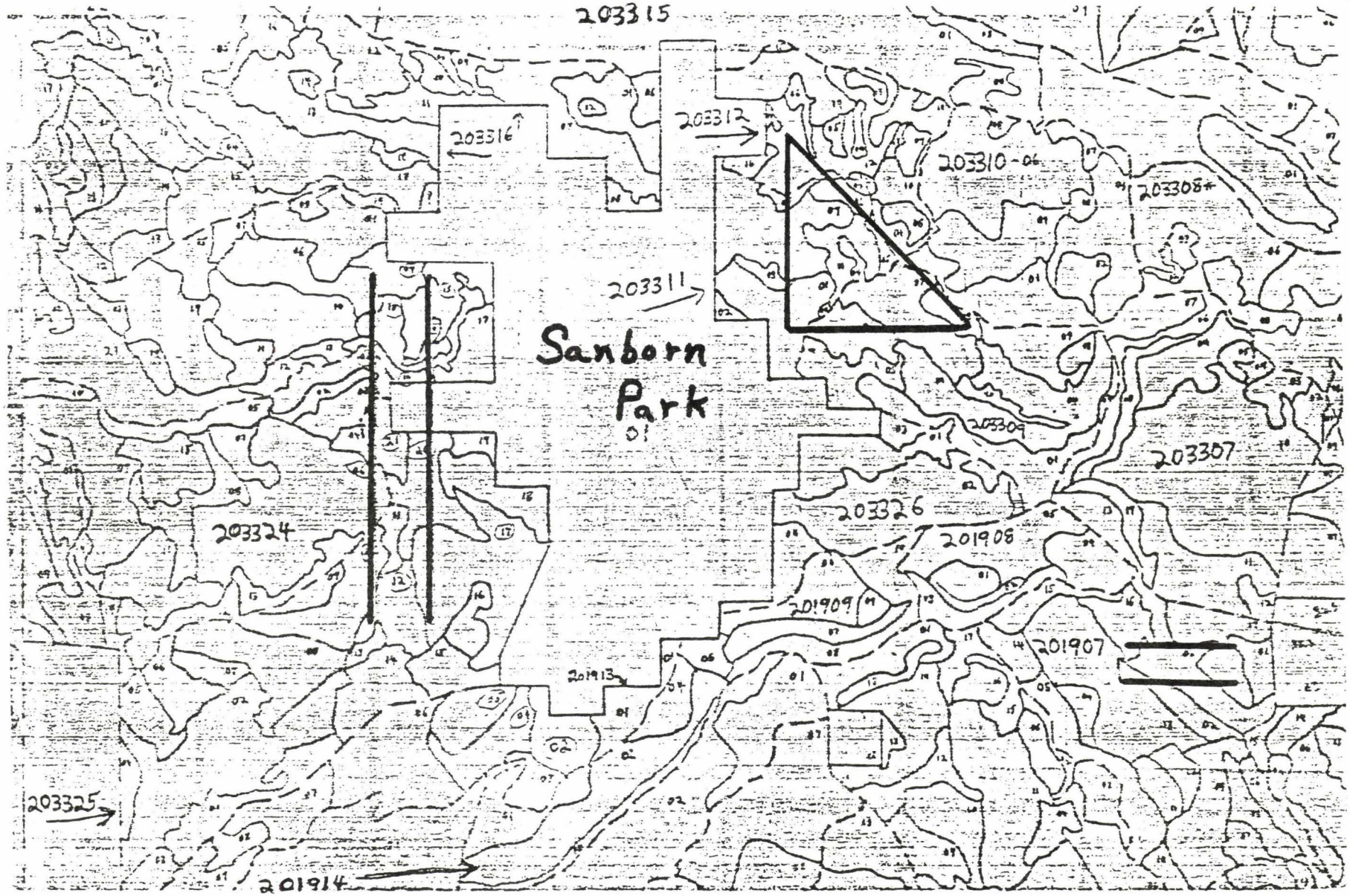

FIGURE 1. The dark lines show approximate location of strip (1/2 chain) survey lines over the stands surveyed near Sanborn Park.

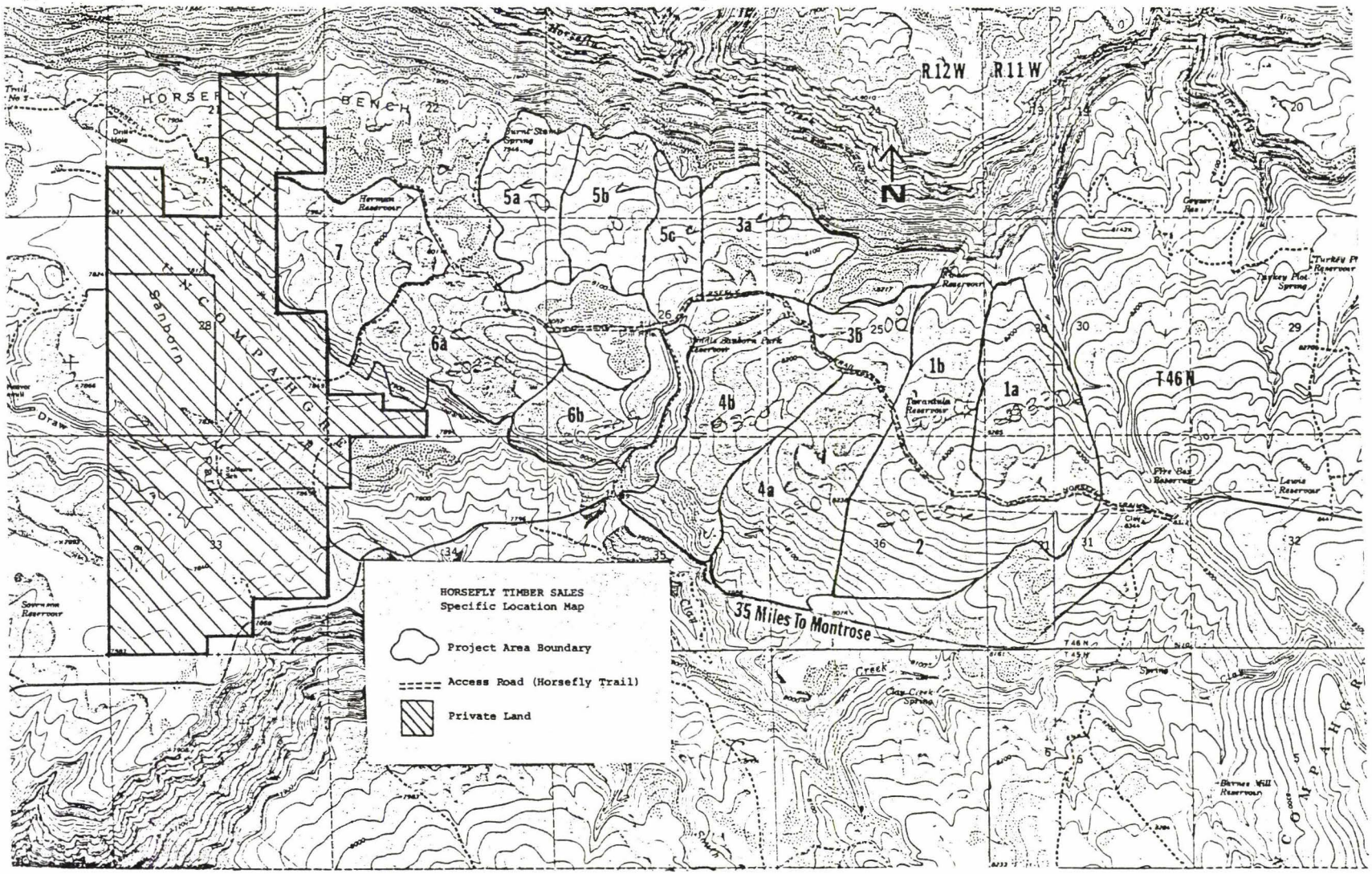

FIGURE 2. Map of Horsefly Timber Sales which cover the east quadrant of private land of Sanborn Park.

BIOLOGICAL INFORMATION AND SURVEY RESULTS

Causal Agents: Dendroctonus ponderosae Hopkins, mountain pine beetle (MPB) and D. adjunctus Blandford, roundheaded pine beetle (RHPB), and D. brevicomis LeConte, western pine beetle (WPB).

Host: Pinus ponderosa Laws, ponderosa pine.

The life cycle for two of these bark beetles, MPB and RHPB, is typically one year per generation. Both species are considered primary tree killers, attacking the lower bole first.

In contrast, WPB produces two generations per year on the Uncompahgre Plateau and is usually considered a secondary bark beetle in that their preferred hosts are weakened trees due to disease, other bark beetle attacks or injuries (i.e., lightning strikes or mechanical damage by tractors and etc.). Initial attacks occur midway on the bole. For a more detailed description of these bark beetles refer to Forest Insect and Disease Leaflets 1, 2 and 155, USDA Forest Service.

Since there are three bark beetle species (MPB, RHPB and WPB), attacks will occur from early spring (May) to late fall (November). In other words, the beetles are expected to be attacking new host material during the usual summer work season which will necessitate constant looking for the new hits if a sanitation salvage or direct control tactics are to be implemented.

Analysis of the strip survey data revealed that 6.3 trees per acre have been killed due to the bark beetle complex (MPB, RHPB and WPB). In 1984, the tree loss was 4.3 and the cumulative loss 1980 through 1983 was 1.9 trees per acre (Appendix A). Tree mortality in 1984 amounted to 70 percent of the total demonstrating significant increase in populations. The gross area represented by this survey is about 4,000 acres.

Analysis of the 12 Stage II printouts (Appendix B) indicate the average stocking is 221 stems per acre (range is 12 to 776 T/A). Assuming the strip cruise loss estimate, 6 T/A (Appendix A), the current live stand stocking is estimated to be 215 T/A. The predicted average loss for the infestation period is 29 T/A (Appendix C). The 6 T/A already killed by the beetles amounts to 20 percent of the predicted mortality.

An intensive search in timber sale units 3B and 4A was made to assess the infestation occurrence within the gross sale area of about 2,500 acres which is 70 percent completed. Two trees were found to have been attacked in 1984. One of the trees was adequately infested to cause its death, but the other is expected to survive based on the attacks at the time of examination. Approximately 1 out of 20 logs in the units contained some bark beetle egg galleries established in 1984.

In the search made on the south of Sanborn Park between the road and Clay Creek, 15 beetle killed trees were found on federal land; no current infested trees were found on federal land, but infested trees were observed on the adjacent private land. Counts of the infested trees were not made for the private land.

A review of the Land and Resource Management Plan and the Management Area Map (see Figure 3) indicates the "Management area Direction." On the west, north and some of the east side of the Sanborn Park private land the management emphasis is for wood fiber production, identified as 7E Management Areas on the map. On the remainder of the east side and the south side of Sanborn Park the management emphasis is for livestock grazing, the 6B Management Areas.

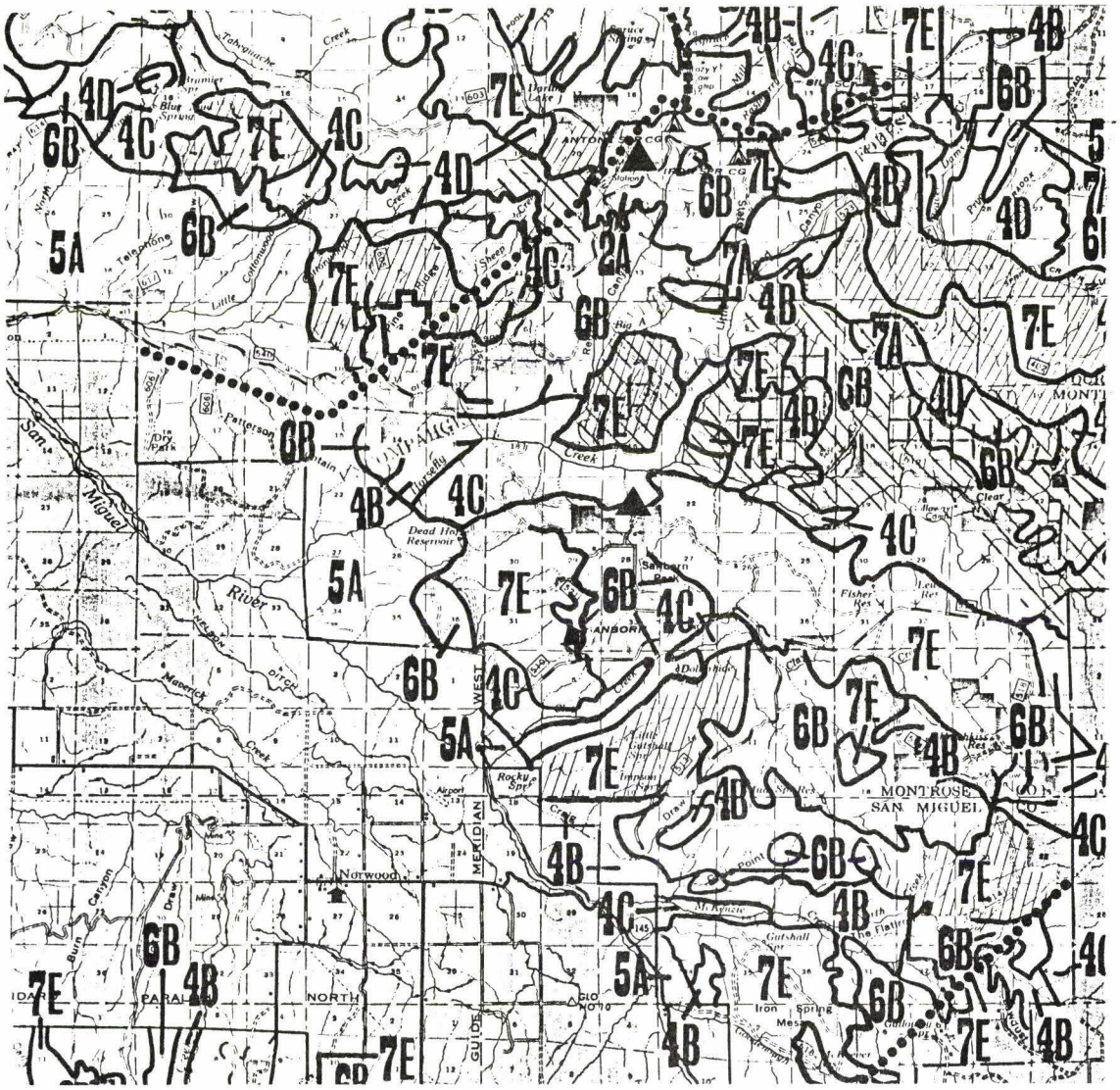

FIGURE 3. Reference Map. Small section of Grand Mesa, Uncompahgre, and Gunnison National Forests Management Area Map, Land Resource Management Plan. Sanborn Park is located in the center. Shaded area is private land USFS lands are white.

ALTERNATIVES

1. One alternative is to do nothing, let the infestation continue naturally. Assuming the loss predictions are valid, about 23 additional trees per acre will be killed.

2. Direct Control Alternative: Treat all the infested trees to kill the beetles. This can be accomplished by salvage removal, fell and burn, or fell and apply lindane. Assuming the stand averages, there is potential to save 23 trees/acre if all infested trees are treated immediately. Realistically though, a new set of trees will become infested during the summer of 1985. A more realistic projection of trees to be saved is 12 to 15 per acre if all infested trees in the Sanborn Park area were treated by the spring of 1986.

   Total implementation of this alternative would be temporary for Sanborn Park is a small portion of a large outbreak and the host remains in a highly susceptible condition. The logical expectation would be re-infestation of the area within 1 to 3 years if the host susceptibility is not lowered by silvicultural methods.

3. Prevention Alternative: This alternative is to silviculturally treat the stands to obtain the desired stocking levels concurrent with sanitation salvage as needed. Bark beetle attacks were difficult to find in a search conducted in cutting units 3B and 4A. Only two trees could be found with current attacks, some egg galleries were found (less that one per square foot) on a few cull or unskidded logs. It was obvious the bark beetle activity was much lower than in the adjacent untreated stands.

4. High value individual trees can be protected from bark beetle infestation by properly applying carbaryl to individual trees. Therefore, valuable trees in campgrounds, administrative sites, homesites, etc., can be treated to prevent attack by mountain pine beetle.

RECOMMENDATIONS

After review of the Forest Plan, it is recommended that Alternative 4 be implemented in all management areas where high value individual trees are imminentally threatened. In management areas with timber production emphasis, the priority for treatment should be immediate. The Prevention Alternative (silviculture) is recommended for all timber emphasis areas as it will provide the best long term protection to bark beetle outbreaks. In the Range and Wildlife management areas, bark beetle infestations generally produce a positive effect and should rate low in treatment priority.

APPENDIX A:

Survey Summary of Ponderosa Pine Mortality

Survey Date: Nov. 1984
Survey Area: Sanborn Park
Ranger District: Ouray
National Forest: Uncompahgre

Sample Method: Strip
Sample width: 1/2 chain
Sample length: 434 chains
Survey acres: 21.95

TOTAL TREES TALLIED & TREES PER ACRE (T/A)

DBH Midpoint 0.5	Infested, T/A (1984)		Old Mortality, T/A (1980-1984)		Total Mortality, T/A (1980-1984)	
<6	6	.27	1	.05	7	.32
7	11	.50	2	.09	13	.59
8	10	.46	3	.14	13	.60
9	17	.77	5	.23	22	1.00
10	14	.64	2	.09	16	.73
11	12	.55	6	.27	18	.82
12	7	.32	2	.09	9	.41
13	10	.46	2	.09	12	.55
14	5	.23	1	.05	6	.28
15	2	.09	5	.23	7	.32
16			4	.18	4	.18
17			4	.18	4	.18
18			1	.05	1	.05
19						
20			1	.05	1	.05
21						
22	1	.05	1	.05	2	.10
23			2	.09	2	.09
24			1	.09	1	.05
	98	4.34	40	1.98	138	6.32

Attack Ratio: Infested to old = 2.45:1

APPENDIX B: (1)


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**************************        **********************************************        **********************************************
* COMP-STAND 203309-0004 *        *FOREST 04   DISTRICT 06   SURVEY DATE 0779*        *INDV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *        * VARGEN PROGRAM USING NEW STAGE II       *        *SAMPLE POINTS    19  SAMPLE TREES    72  *
*PONDEROSA P.  SAWTIMBER *        *    ORIGIN DATE 1897   STAND ACRES  178   *        *BAF 20  FPS  3CC GP   C  SURVEY TYPE 4   *
**************************        **********************************************        **********************************************
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- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREE0IN+)	23.	56.	79.	42.	121.	0.	121.	143.	31.	4C.
(BASL5IN+)	22.	27.	49.	2.	52.	0.	52.	82.	18.	1C.
(CUBE5IN+)	436.	377.	813.	12.	825.	0.	825.	83.	18.	158.
(SCRB9IN+)	1647.	1C61.	2708.	0.	27C8.	0.	2708.	93.	20.	583.
(INT.9IN+)	1898.	1268.	31c6.	0.	3166.	0.	3166.	92.	2C.	672.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	-DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	0.	17.	17.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NC-CONES
C. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	c.9	26	47	51	14	118.73	79.24
OVR	12.8	44	82	39	38	706.10	2628.34
TOT	9.4	34	62	90	52	824.83	2708.08

- N U M B E R O F S T A N D I N G S N A G S -
- P E R A C R E -

HARD	SOFT
0	0

- P E R A C R E S T A N D T A B L E 'S U M M A R I E S -

PP (122,136-137)

DIAMETER	STEMS DES	STEMS ACC	SND CULL	RNT CULL	SALV	MORT	BASAL AREA DES	BASAL AREA ACC	BASAL AREA CULL	BASAL AREA SND DEAD	CUBIC VOLUME DES	CUBIC VOLUME ACC	CUBIC VOLUME CULL	CUBIC VOLUME SND DEAD	SCRIBNER VOLUME DES	SCRIBNER VOLUME ACC	SCRIBNER VOLUME SND DEAD	LOWR STM CUBIC DES	LOWR STM CUBIC ACC	LOWR STM CUBIC SND DEAD
0- .9	.0	.C	.0	.C	.0	.C	.C	.0	.C	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	0.
1- 2.9	.0	.C	31.6	.C	.0	.C	.C	.0	.7	.0	0.	0.	0.	0.	0.	C.	0.	0.	C.	0.
3- 4.9	.0	.C	.0	.C	.0	.C	.C	.C	.0	.0	0.	0.	C.	0.	0.	C.	C.	0.	C.	C.
5- 6.9	4.2	24.5	.0	10.8	.0	.0	1.1	5.3	2.1	.0	10.	38.	12.	0.	0.	0.	C.	0.	C.	C.
7- 8.9	3.2	6.1	.0	.C	.0	.C	1.1	2.1	.0	.0	14.	21.	C.	0.	24.	46.	0.	0.	C.	C.
9-10.9	1.7	12.1	.0	.C	.C	.0	1.1	6.3	.C	.0	16.	80.	C.	0.	48.	155.	C.	14.	69.	0.
11-12.9	6.9	6.6	.0	.C	.0	.0	5.3	5.3	.0	.0	78.	83.	C.	0.	245.	274.	C.	67.	72.	C.
13-14.9	4.0	3.9	.0	.C	.0	.0	4.2	4.2	.0	.0	80.	63.	0.	0.	311.	231.	C.	70.	55.	0.
15-16.9	.9	.7	.0	.C	.0	.C	1.1	1.1	.0	.0	20.	21.	C.	0.	79.	88.	0.	17.	18.	C.
17-18.9	.0	.6	.0	.C	.0	.C	.C	1.1	.0	.0	0.	23.	C.	0.	0.	101.	0.	0.	2C.	0.
19-20.9	.5	.5	.0	.C	.C	.C	1.1	1.1	.0	.0	28.	25.	C.	0.	126.	112.	C.	25.	22.	C.
21-22.9	.4	.4	.0	.C	.0	.C	1.1	1.1	.0	.0	26.	24.	0.	0.	112.	10C.	0.	24.	22.	C.
23-24.9	1.0	.0	.0	.C	.0	.0	3.2	.0	.0	.0	84.	C.	0.	0.	366.	C.	0.	78.	C.	C.
25-26.9	.6	.C	.0	.C	.0	.C	2.1	.0	.0	.0	56.	0.	C.	0.	249.	C.	0.	52.	C.	C.
27-28.9	.0	.C	.0	.C	.0	.C	.C	.C	.C	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	0.
29-30.9	.2	.C	.0	.C	.0	.C	1.1	.C	.C	.0	25.	0.	C.	0.	112.	C.	0.	23.	C.	0.
31-99.9	.0	.0	.0	.C	.0	.C	.C	.0	.0	.0	0.	0.	C.	0.	0.	0.	C.	0.	C.	C.
0- 4.9	.0	.C	31.6	.C	.0	.C	.C	.C	.7	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	C.
5-99.9	23.5	55.5	.0	10.8	.0	.C	22.1	27.4	2.1	.0	436.	377.	12.	0.	1671.	1108.	C.	370.	278.	0.
0-99.9	23.5	55.5	31.6	10.8	.0	.C	22.1	27.4	2.8	.0	436.	377.	12.	0.	1671.	1108.	0.	370.	278.	0.

'END OF PRINTOUT'

APPENDIX B: (2)


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**************************        **********************************************        **********************************************
* COMP-STAND 203309-0005 *        *FOREST 04   DISTRICT 06   SURVEY DATE 0779*        *INDV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *        * VARGEN PROGRAM USING NEW STAGE II       *        *SAMPLE POINTS     4  SAMPLE TREES    2C  *
*PONDEROSA P.  SAWTIMBER *        *    ORIGIN DATE 1916   STAND ACRES   39   *        *BAF 20  FPS  3C0 GP   0  SURVEY TYPE 4   *
**************************        **********************************************        **********************************************
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- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREE0IN+)	66.	4C.	106.	17.	122.	0.	122.	83.	39.	60.
(BASL5IN+)	35.	3C.	65.	5.	7C.	0.	7C.	76.	36.	31.
(CUBE5IN+)	5C1.	466.	967.	17.	984.	0.	984.	85.	4C.	497.
(SCRB9IN+)	1340.	1492.	2832.	0.	2832.	0.	2832.	76.	36.	1282.
(INT.9IN+)	16C4.	18C6.	3410.	0.	341C.	0.	341C.	77.	37.	1563.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	-DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	0.	6C.	6C.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NC-CONES
C. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	7.4	20	64	48	15	104.24	121.08
OVR	11.4	43	64	74	55	879.48	2710.56
TOT	9.9	34	64	122	70	983.72	2831.65

- N U M B E R O F S T A N D I N G S N A G S -
- P E R A C R E -

HARD	SOFT
0	2

- P E R A C R E S T A N D T A B L E 'S U M M A R I E S -

PP (122,136-137)

	STEMS						BASAL AREA				CUBIC VOLUME				SCRIBNER VOLUME			LOWR STM CUBIC		
DIAMETER	DES	ACC	SND CULL	RNT CULL	SALV	MORT	DES	ACC	CULL	SND DEAD	DES	ACC	CULL	SND DEAD	DES	ACC	SND DEAD	DES	ACC	SND DEAD
0- .9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	0.	0.	0.	C.	C.	0.	C.	0.
1- 2.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	0.	0.	0.	C.	0.	0.	C.	0.
3- 4.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	0.	0.	0.	C.	0.	0.	C.	0.
5- 6.9	22.4	.0	.0	.C	.0	.C	5.C	.0	.0	.0	27.	0.	C.	0.	0.	0.	C.	0.	C.	0.
7- 8.9	12.7	.C	.0	16.7	.0	.C	5.C	.0	5.0	.0	77.	0.	17.	0.	134.	C.	0.	0.	C.	0.
9-10.9	17.5	17.0	.0	.C	.0	.C	10.0	10.0	.0	.0	154.	143.	C.	0.	410.	365.	0.	138.	127.	C.
11-12.9	5.7	18.9	.0	.C	.0	.0	5.C	15.0	.0	.0	79.	231.	C.	0.	276.	759.	0.	71.	207.	C.
13-14.9	5.1	.C	.0	.C	.0	.0	5.C	.0	.0	.0	72.	0.	C.	0.	251.	C.	0.	64.	C.	0.
15-16.9	.0	4.0	.0	.C	.0	.0	.C	5.0	.0	.0	0.	91.	C.	0.	0.	367.	0.	0.	82.	0.
17-18.9	.0	.C	.0	.C	.0	.C	.C	.0	.0	.0	0.	0.	C.	0.	0.	0.	0.	0.	C.	0.
19-20.9	2.4	.C	.0	.C	.0	.C	5.C	.0	.0	.0	92.	0.	0.	0.	403.	C.	0.	82.	C.	0.
21-22.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	0.	0.	0.	C.	C.
23-24.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	0.
25-26.9	.0	.C	.0	.C	.0	.C	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	C.
27-28.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	0.
29-30.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	0.	0.	0.	C.	0.	0.	C.	0.
31-99.9	.0	.C	.0	.C	.0	.C	.C	.0	.0	.0	0.	C.	C.	0.	0.	C.	0.	0.	C.	0.
0- 4.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	0.
5-99.9	65.7	39.9	.0	16.7	.0	.0	35.C	30.0	5.0	.0	501.	466.	17.	0.	1474.	1492.	C.	355.	416.	0.
0-99.9	65.7	39.9	.0	16.7	.0	.C	35.C	30.0	5.0	.0	501.	466.	17.	0.	1474.	1492.	C.	355.	416.	C.

'END OF PRINTOUT'

APPENDIX B: (3)

STAGE II STAND ANALYSIS UNCOMPAHGRE LOADC4 082UPDAT04C6 DATE C1C885 PAGE 22

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* COMP-STAND 203309-CCC6 *        *FOREST 04   DISTRICT C6   SURVEY DATE C779*        *INDV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *        * VARGEN PROGRAM USING NEW STAGE II       *        *SAMPLE POINTS    5  SAMPLE TREES   24  *
*PONDEROSA P.  SEED/SAPS *        *    ORIGIN DATE 1950   STAND ACRES   46  *        *BAF 20  FPS  300 GP   0  SURVEY TYPE 4  *
**************************        ******************************************        ******************************************
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- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREEDIN+)	582.	7.	589.	73.	662.	0.	662.	189.	80.	629.
(BASL5IN+)	24.	4.	28.	4.	32.	0.	32.	84.	35.	13.
(CUBE5IN+)	398.	24.	422.	31.	453.	0.	453.	90.	38.	205.
(SCRB9IN+)	1437.	49.	1486.	0.	1486.	0.	1486.	98.	41.	733.
(INT.9IN+)	1635.	55.	1690.	0.	1690.	0.	1690.	98.	41.	830.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	SOUND DEAD-DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	0.	C.	C.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NC-CONES
C. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	3.2	15	30	577	44	165.72	379.47
OVR	9.2	32	55	24	16	287.65	1106.26
TOT	3.2	14	30	662	60	453.36	1485.72

- N U M B E R O F S T A N D I N G S N A G S -
- P E R A C R E -

HARD	SOFT
0	0

- P E R A C R E S T A N D T A B L E S U M M A R I E S -

PP (122,136-137)

DIAMETER	STEMS DES	ACC	SND CULL	RNT CULL	SALV	MORT	BASAL AREA DES	ACC	CULL	SND DEAD	CUBIC VOLUME DES	ACC	CULL	SND DEAD	SCRIBNER VOLUME DES	ACC	SND DEAD	LOWR STM CUBIC DES	ACC	SND DEAD
0- .9	.0	.0	60.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1- 2.9	300.0	.0	.0	.0	.0	.0	6.5	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3- 4.9	240.0	.0	.0	.0	.0	.0	21.8	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5- 6.9	19.1	.0	.0	.0	.0	.0	4.0	.0	.0	.0	30.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7- 8.9	15.0	.0	.0	12.7	.0	.0	4.0	.0	4.0	.0	32.	0.	31.	0.	114.	0.	0.	0.	0.	0.
9-10.9	.0	6.9	.0	.0	.0	.0	.0	4.0	.0	.0	0.	24.	0.	0.	0.	49.	0.	0.	21.	0.
11-12.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13-14.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15-16.9	2.9	.0	.0	.0	.0	.0	4.0	.0	.0	.0	90.	0.	0.	0.	382.	0.	0.	81.	0.	0.
17-18.9	2.5	.0	.0	.0	.0	.0	4.0	.0	.0	.0	78.	0.	0.	0.	331.	0.	0.	70.	0.	0.
19-20.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21-22.9	1.5	.0	.0	.0	.0	.0	4.0	.0	.0	.0	85.	0.	0.	0.	364.	0.	0.	80.	0.	0.
23-24.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25-26.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27-28.9	1.0	.0	.0	.0	.0	.0	4.0	.0	.0	.0	82.	0.	0.	0.	360.	0.	0.	78.	0.	0.
29-30.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31-99.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0- 4.9	540.0	.0	60.0	.0	.0	.0	28.3	.0	.0	.0	0.	0.	0.	0.	.0	0.	0.	0.	0.	0.
5-99.9	42.0	6.9	.0	12.7	.0	.0	24.0	4.0	4.0	.0	398.	24.	31.	0.	1551.	49.	0.	309.	21.	0.
0-99.9	582.0	6.9	60.0	12.7	.0	.0	52.3	4.0	4.0	.0	398.	24.	31.	0.	1551.	49.	0.	309.	21.	0.

'END OF PRINTOUT'

APPENDIX B: (4)


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**************************        ********************************************        ********************************************
* COMP-STAND 203309-0007 *        *FOREST 04   DISTRICT 06   SURVEY DATE 0779*        *INCV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *        * VARGEN PROGRAM USING NEW STAGE II       *        *SAMPLE POINTS     9  SAMPLE TREES    38  *
*PONDEROSA P.  SAWTIMBER *        *    ORIGIN DATE 1909   STAND ACRES   92  *        *BAF 20  FPS  300 GP   0  SURVEY TYPE 4   *
**************************        ********************************************        ********************************************
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- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREEDIN+)	53.	115.	168.	39.	207.	0.	207.	132.	42.	96.
(BASL5IN+)	13.	47.	60.	2.	62.	0.	62.	84.	27.	18.
(CUBE5IN+)	203.	615.	818.	16.	834.	0.	834.	72.	23.	212.
(SCRB9IN+)	590.	1308.	1898.	0.	1898.	0.	1898.	77.	24.	515.
(INT.9IN+)	708.	1543.	2251.	0.	2251.	0.	2251.	78.	25.	616.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	SOUND DEAD-DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	0.	1.	1.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NO-CONES
0. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	.0	0	0	0	0	.00	.00
OVR	7.8	31	59	174	62	834.48	1898.19
TOT	8.5	32	58	141	62	834.48	1898.19

- N U M B E R O F S T A N D I N G S N A G S -
- P E R A C R E -

HARD	SOFT
0	6

- P E R A C R E S T A N D T A B L E S U M M A R I E S -

PP (122,136-137)

	STEMS						BASAL AREA				CUBIC VOLUME				SCRIBNER VOLUME			LOWR STM CUBIC		
DIAMETER	DES	ACC	SND CULL	RNT CULL	SALV	MORT	DES	ACC	CULL	SND DEAD	DES	ACC	CULL	SND DEAD	DES	ACC	SND DEAD	DES	ACC	SND DEAD
0- .9	.0	.0	33.3	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1- 2.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3- 4.9	33.3	.0	.0	.0	.0	.0	4.4	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5- 6.9	.0	44.7	.0	.0	.0	.0	.0	8.9	.0	.0	0.	75.	0.	0.	0.	0.	0.	0.	0.	0.
7- 8.9	5.6	45.2	.0	5.9	.0	.0	2.2	15.6	2.2	.0	27.	168.	16.	0.	43.	343.	0.	0.	0.	0.
9-10.9	3.9	9.2	.0	.0	.0	.0	2.2	4.4	.0	.0	30.	55.	0.	0.	68.	97.	0.	26.	49.	0.
11-12.9	8.2	11.9	.0	.0	.0	.0	6.7	8.9	.0	.0	102.	123.	0.	0.	338.	370.	0.	91.	109.	0.
13-14.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15-16.9	1.8	1.7	.0	.0	.0	.0	2.2	2.2	.0	.0	45.	33.	0.	0.	134.	128.	0.	40.	29.	0.
17-18.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19-20.9	.0	1.9	.0	.0	.0	.0	.0	4.4	.0	.0	0.	101.	0.	0.	0.	453.	0.	0.	89.	0.
21-22.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23-24.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25-26.9	.0	.6	.0	.0	.0	.0	.0	2.2	.0	.0	0.	59.	0.	0.	0.	261.	0.	0.	56.	0.
27-28.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29-30.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31-99.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0- 4.9	33.3	.0	33.3	.0	.0	.0	4.4	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5-99.9	19.5	115.2	.0	5.9	.0	.0	13.3	46.7	2.2	.0	203.	615.	16.	0.	633.	1652.	0.	157.	332.	0.
0-99.9	52.9	115.2	33.3	5.9	.0	.0	17.7	46.7	2.2	.0	203.	615.	16.	0.	633.	1652.	0.	157.	332.	0.

'END OF PRINTOUT'

APPENDIX B: (5)

STAGE II STAND ANALYSIS UNCOMPAHGRE LCA004 082UPDAT0406 DATE 01C885 PAGE 3C

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**************************      ******************************************      ******************************************
* COMP-STAND 203309-0008 *      *FOREST 04   DISTRICT 06   SURVEY DATE 0779*      *INDV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *      * VARGEN PROGRAM USING NEW STAGE II       *      *SAMPLE POINTS     3  SAMPLE TREES     8  *
*PONDEROSA P.  SAWTIMBER *      *    ORIGIN DATE 1860   STAND ACRES   21   *      *BAF 20  FPS  300 GP   0  SURVEY TYPE 4   *
**************************      ******************************************      ******************************************
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- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREE0IN+)	1.	10.	12.	0.	12.	0.	12.	66.	35.	6.
(BASL5IN+)	7.	20.	27.	0.	27.	0.	27.	43.	23.	9.
(CUBE5IN+)	162.	414.	576.	0.	576.	0.	576.	38.	21.	164.
(SCRB9IN+)	718.	1816.	2535.	0.	2535.	0.	2535.	39.	21.	727.
(INT.9IN+)	809.	2068.	2877.	0.	2877.	0.	2877.	39.	21.	829.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	SOUND DEAD-DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	0.	0.	C.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NC-CONES
C. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	.0	0	0	0	0	.00	.00
OVR	20.1	56	119	12	27	576.17	2534.64
TOT	20.1	56	119	12	27	576.17	2534.64

- N U M B E R O F S T A N D I N G S N A G S -
- P E R A C R E -

HARD	SOFT
0	C

- P E R A C R E S T A N D T A B L E S U M M A R I E S -

PP (122,136-137)

DIAMETER	STEMS DES	STEMS ACC	STEMS SND CULL	STEMS RNT CULL	STEMS SALV	STEMS MORT	BASAL AREA DES	BASAL AREA ACC	BASAL AREA CULL	BASAL AREA SND DEAD	CUBIC VOLUME DES	CUBIC VOLUME ACC	CUBIC VOLUME CULL	CUBIC VOLUME SND DEAD	SCRIBNER VOLUME DES	SCRIBNER VOLUME ACC	SCRIBNER VOLUME SND DEAD	LOWR STM CUBIC DES	LOWR STM CUBIC ACC	LOWR STM CUBIC SND DEAD
0- .9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1- 2.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3- 4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5- 6.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7- 8.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
9-10.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11-12.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
13-14.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
15-16.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
17-18.9	.0	7.1	.0	.0	.0	.0	.0	13.3	.0	.0	0.	273.	0.	0.	0.	1193.	0.	0.	245.	0.
19-20.9	.0	3.2	.0	.0	.0	.0	.0	6.7	.0	.0	0.	141.	0.	0.	0.	623.	0.	0.	126.	0.
21-22.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23-24.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25-26.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27-28.9	1.5	.0	.0	.0	.0	.0	6.7	.0	.0	.0	162.	0.	0.	0.	718.	0.	0.	154.	0.	0.
29-30.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31-99.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0- 4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5-99.9	1.5	10.3	.0	.0	.0	.0	6.7	20.0	.0	.0	162.	414.	0.	0.	718.	1816.	0.	154.	371.	0.
0-99.9	1.5	10.3	.0	.0	.0	.0	6.7	20.0	.0	.0	162.	414.	0.	0.	718.	1816.	0.	154.	371.	0.

'END OF PRINTOUT'

APPENDIX B: (6)


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**************************        ********************************************        ********************************************
* COMP-STAND 203310-0004 *        *FOREST 04   DISTRICT 06   SURVEY DATE 1178*        *INDV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *        * VARGEN PROGRAM USING NEW STAGE II       *        *SAMPLE POINTS    10  SAMPLE TREES    42  *
*PONDEROSA P.  SAWTIMBER *        *    ORIGIN DATE 1887   STAND ACRES  100   *        *BAF 20  FPS  300 GP   0  SURVEY TYPE 4   *
**************************        ********************************************        ********************************************
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- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREE0IN+)	87.	39.	127.	73.	200.	0.	200.	130.	39.	86.
(BASL5IN+)	40.	20.	60.	4.	64.	0.	64.	92.	28.	19.
(CUBE5IN+)	922.	290.	1212.	26.	1238.	0.	1238.	94.	28.	386.
(SCRB9IN+)	3864.	776.	4639.	0.	4639.	0.	4639.	107.	32.	1641.
(INT.9IN+)	4394.	913.	5306.	0.	5306.	0.	5306.	107.	32.	1876.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	SOUND DEAD-DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	0.	C.	C.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NC-CONES
C. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	2.5	13	28	60	2	.00	.00
OVR	11.0	41	77	80	64	1238.09	4639.25
TOT	11.0	41	77	80	64	1238.09	4639.25

- N U M B E R O F S T A N D I N G S N A G S -
- P E R A C R E -

HARD	SOFT
0	0

- P E R A C R E S T A N D T A B L E S U M M A R I E S -

PP (122,136-137)

DIAMETER	STEMS DES	STEMS ACC	STEMS SND CULL	STEMS RNT CULL	STEMS SALV	STEMS MORT	BASAL AREA DES	BASAL AREA ACC	BASAL AREA CULL	BASAL AREA SND DEAD	CUBIC VOLUME DES	CUBIC VOLUME ACC	CUBIC VOLUME CULL	CUBIC VOLUME SND DEAD	SCRIBNER VOLUME DES	SCRIBNER VOLUME ACC	SCRIBNER VOLUME SND DEAD	LOWR STM CUBIC DES	LOWR STM CUBIC ACC	LOWR STM CUBIC SND DEAD
0- .9	.0	.0	60.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1- 2.9	60.0	.0	.0	.0	.0	.0	2.1	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3- 4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5- 6.9	.0	7.7	.0	.0	.0	.0	.0	2.0	.0	.0	0.	17.	0.	0.	0.	0.	0.	0.	0.	0.
7- 8.9	6.7	6.7	.0	5.9	.0	.0	2.0	2.0	2.0	.0	26.	16.	11.	0.	51.	51.	0.	0.	0.	0.
9-10.9	.0	3.3	.0	.0	.0	.0	.0	2.0	.0	.0	0.	32.	0.	0.	0.	93.	0.	0.	28.	0.
11-12.9	2.3	5.4	.0	.0	.0	.0	2.0	4.0	.0	.0	38.	59.	0.	0.	138.	183.	0.	33.	52.	0.
13-14.9	1.9	3.6	.0	.0	.0	.0	2.0	4.0	.0	.0	34.	83.	0.	0.	129.	333.	0.	30.	73.	0.
15-16.9	5.9	.0	.0	.0	.0	.0	8.0	.0	.0	.0	167.	0.	0.	0.	699.	0.	0.	148.	0.	0.
17-18.9	2.3	.0	.0	.0	.0	.0	4.0	.0	.0	.0	77.	0.	0.	0.	332.	0.	0.	69.	0.	0.
19-20.9	3.7	.0	.0	.0	.0	.0	8.0	.0	.0	.0	203.	0.	0.	0.	918.	0.	0.	180.	0.	0.
21-22.9	2.2	.8	.0	.0	.0	.0	6.0	2.0	.0	.0	166.	40.	0.	0.	723.	167.	0.	157.	37.	0.
23-24.9	2.0	.0	.0	.0	.0	.0	6.0	.0	.0	.0	161.	0.	0.	0.	703.	0.	0.	151.	0.	0.
25-26.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27-28.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29-30.9	.4	.0	.0	.0	.0	.0	2.0	.0	.0	.0	49.	0.	0.	0.	220.	0.	0.	47.	0.	0.
31-99.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0- 4.9	60.0	.0	60.0	.0	.0	.0	2.1	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5-99.9	27.4	27.5	.0	5.9	.0	.0	40.0	16.0	2.0	.0	922.	247.	11.	0.	3914.	827.	0.	815.	190.	0.
0-99.9	87.4	27.5	60.0	5.9	.0	.0	42.1	16.0	2.0	.0	922.	247.	11.	0.	3914.	827.	0.	815.	190.	0.

ASPEN(74e)

DIAMETER	STEMS DES	STEMS ACC	STEMS SND CULL	STEMS RNT CULL	STEMS SALV	STEMS MORT	BASAL AREA DES	BASAL AREA ACC	BASAL AREA CULL	BASAL AREA SND DEAD	CUBIC VOLUME DES	CUBIC VOLUME ACC	CUBIC VOLUME CULL	CUBIC VOLUME SND DEAD	SCRIBNER VOLUME DES	SCRIBNER VOLUME ACC	SCRIBNER VOLUME SND DEAD	LOWR STM CUBIC DES	LOWR STM CUBIC ACC	LOWR STM CUBIC SND DEAD
0- .9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1- 2.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3- 4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

APPENDIX B: (7)


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**************************      **********************************************      **********************************************
* COMP-STAND 203319-CC15 *      *FOREST 04   DISTRICT C6   SURVEY DATE 0879*      *INCV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *      * VARGEN PROGRAM USING NEW STAGE II        *      *SAMPLE PCINTS     7  SAMPLE TREES    35  *
*PONDEROSA P.  SAWTIMBER *      *    ORIGIN DATE 1914   STAND ACRES   64   *      *BAF 40  FPS  3C0 GP   0  SURVEY TYPE 4   *
**************************      **********************************************      **********************************************
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- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREEDIN+)	8.	147.	155.	15.	17C.	0.	17C.	157.	56.	1C8.
(BASLSIN+)	17.	86.	1C3.	6.	1C9.	0.	1C9.	101.	36.	45.
(CUBESIN+)	397.	1616.	2013.	54.	2C68.	0.	2068.	88.	32.	739.
(SCRB9IN+)	1738.	4783.	6522.	0.	6522.	0.	6522.	74.	26.	1940.
(INT.9IN+)	1973.	5589.	7562.	0.	7562.	0.	7562.	73.	26.	2243.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	0.	C.	C.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NC-CONES
C. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	7.3	32	0	2C	6	61.73	.CO
OVR	10.5	49	66	151	103	2005.79	6521.69
TOT	10.1	47	66	170	109	2067.52	6521.69

- N U M B E R C F S T A N D I N G S N A G S -
- P E R A C R E -

HARD	SOFT
0	0

- P E R A C R E S T A N D T A B L E 'S U M M A R I E S -

PP (122,136-137)

DIAMETER	STEMS DES	STEMS ACC	STEMS SND CULL	STEMS RNT CULL	STEMS SALV	STEMS MORT	BASAL AREA DES	BASAL AREA ACC	BASAL AREA CULL	BASAL AREA SND DEAD	CUBIC VOLUME DES	CUBIC VOLUME ACC	CUBIC VOLUME CULL	CUBIC VOLUME SND DEAD	SCRIBNER VOLUME DES	SCRIBNER VOLUME ACC	SCRIBNER VOLUME SND DEAD	LOWR STM CUBIC DES	LOWR STM CUBIC ACC	LOWR STM CUBIC SND DEAD
0- .9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	0.	0.	0.	C.	0.	0.	C.	C.
1- 2.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	C.
3- 4.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	C.
5- 6.9	.0	24.1	.0	.C	.0	.0	.C	5.7	.0	.0	0.	95.	C.	0.	0.	C.	0.	0.	C.	C.
7- 8.9	.0	53.9	.0	14.8	.0	.0	.C	17.1	5.7	.0	0.	255.	54.	0.	0.	454.	C.	0.	C.	C.
9-10.9	.0	21.C	.0	.C	.0	.0	.C	11.4	.0	.0	0.	200.	C.	0.	0.	564.	C.	0.	178.	C.
11-12.9	.0	22.6	.0	.C	.0	.0	.C	17.1	.0	.0	0.	307.	C.	0.	0.	1058.	0.	0.	275.	C.
13-14.9	.0	17.2	.0	.C	.0	.C	.C	17.1	.0	.0	0.	336.	0.	0.	0.	1303.	C.	0.	301.	C.
15-16.9	.0	4.1	.0	.C	.0	.C	.C	5.7	.0	.0	0.	133.	C.	0.	0.	568.	C.	0.	119.	0.
17-18.9	3.5	.C	.0	.C	.0	.C	5.7	.0	.0	.0	146.	C.	0.	0.	646.	C.	0.	131.	C.	C.
19-20.9	2.7	2.4	.0	.C	.0	.0	5.7	5.7	.0	.0	118.	140.	C.	0.	525.	636.	C.	106.	126.	C.
21-22.9	2.2	.C	.0	.C	.0	.C	5.7	.0	.0	.0	132.	0.	0.	0.	568.	C.	C.	125.	C.	C.
23-24.9	.0	1.9	.0	.C	.0	.C	.C	5.7	.0	.0	0.	150.	C.	0.	0.	653.	C.	0.	142.	C.
25-26.9	.0	.C	.0	.C	.0	.C	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	C.	0.	C.	0.
27-28.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	C.	0.	C.	C.
29-30.9	.0	.C	.0	.C	.0	.C	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	C.	0.	C.	0.
31-99.9	.0	.C	.0	.C	.0	.C	.C	.C	.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	C.
0- 4.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	C.
5-99.9	8.3	147.1	.0	14.8	.0	.C	17.1	85.7	5.7	.0	397.	1616.	54.	0.	1738.	5237.	C.	362.	1141.	C.
0-99.9	8.3	147.1	.0	14.8	.0	.0	17.1	85.7	5.7	.0	397.	1616.	54.	0.	1738.	5237.	0.	362.	1141.	C.

'END OF PRINTOUT'

APPENDIX B: (8)

STAGE II STAND ANALYSIS UNCOMPAHGRE LOADC4 G82UPDAT0406 DATE 01C885 PAGE 10

* COMP-STAND 203319-0018 *	*FOREST 04 DISTRICT C6 SURVEY DATE 0879*	*INDV RUN NET MERCH FACTORS PAGE TYPE 1*
* SINGLE STAND *	* VARGEN PROGRAM USING NEW STAGE II *	*SAMPLE POINTS 4 SAMPLE TREES 25 *
*PONDEROSA P. SAWTIMBER *	* ORIGIN DATE 1897 STAND ACRES 34 *	*BAF 40 FPS 3C0 GP 0 SURVEY TYPE 4 *

- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREE0IN+)	158.	200.	358.	418.	776.	C.	776.	77.	36.	349.
(BASL5IN+)	70.	60.	130.	20.	150.	0.	150.	34.	16.	30.
(CUBE5IN+)	1589.	887.	2477.	239.	2716.	0.	2716.	23.	11.	362.
(SCRB9IN+)	5405.	1846.	7250.	0.	7250.	0.	7250.	16.	7.	668.
(INT.9IN+)	6137.	2196.	8333.	0.	8333.	0.	8333.	16.	8.	795.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	-DOWN	NONSOUND DEAD-STANDING	TOTAL
C.	C.	C.	C.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NO-CONES
C. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UNC	6.5	31	55	228	58	694.79	.00
OVR	9.0	44	62	172	100	2021.37	7250.24
TOT	8.3	42	59	326	150	2716.16	7250.24

- N U M B E R O F S T A N D I N G S N A G S -

- P E R A C R E -

HARD	SOFT
0	0

- P E R A C R E S T A N D T A B L E S U M M A R I E S -

PP (122,136-137)

	STEMS						BASAL AREA				CUBIC VOLUME				SCRIBNER VOLUME			LOWR STM CUBIC		
DIAMETER	DES	ACC	SND CULL	RNT CULL	SALV	MORT	DES	ACC	CULL	SND DEAD	DES	ACC	CULL	SND DEAD	DES	ACC	SND DEAD	DES	ACC	SND DEAD
0- .9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	C.	C.
1- 2.9	.0	.0	225.0	.C	.0	.0	.C	.0	4.9	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	0.
3- 4.9	75.0	.0	150.0	.C	.0	.0	7.6	.0	13.1	.0	0.	C.	C.	0.	0.	C.	0.	0.	C.	0.
5- 6.9	.0	127.8	.0	.C	.0	.0	.C	20.0	.0	.0	0.	225.	C.	0.	0.	C.	0.	C.	C.	C.
7- 8.9	56.1	34.4	23.7	.C	.0	.0	20.C	10.0	10.0	.0	344.	131.	126.	0.	613.	261.	C.	0.	C.	C.
9-10.9	.0	16.0	19.1	.C	.0	.0	.C	10.0	10.0	.0	0.	193.	114.	0.	0.	655.	C.	0.	178.	0.
11-12.9	.0	11.9	.0	.C	.0	.0	.C	10.0	.0	.0	0.	162.	C.	0.	0.	558.	0.	0.	145.	C.
13-14.9	10.5	10.2	.0	.C	.0	.0	10.C	10.0	.0	.0	174.	171.	C.	0.	644.	632.	C.	156.	153.	0.
15-16.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	C.	0.	C.	0.
17-18.9	5.2	.C	.0	.C	.0	.0	10.C	.0	.0	.0	226.	0.	C.	0.	1000.	0.	C.	203.	C.	0.
19-20.9	4.4	.C	.0	.C	.0	.0	10.C	.0	.0	.0	283.	C.	C.	0.	1295.	0.	C.	254.	C.	0.
21-22.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	0.	0.	0.	C.	C.
23-24.9	6.3	.C	.0	.C	.0	.0	20.C	.0	.0	.0	562.	0.	C.	0.	2465.	C.	0.	532.	C.	C.
25-26.9	.0	.C	.0	.C	.0	.0	.0	.C	.0	.0	0.	0.	C.	0.	0.	C.	C.	0.	C.	0.
27-28.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	C.	0.	C.	C.
29-30.9	.0	.C	.0	.C	.0	.0	.C	.0	.0	.0	0.	0.	C.	0.	0.	C.	C.	0.	C.	0.
31-99.9	.0	.C	.0	.C	.0	.0	.C	.C	.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	0.
0- 4.9	75.0	.C	375.0	.C	.0	.0	7.6	.0	18.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	0.
5-99.9	82.5	200.4	42.8	.C	.0	.0	70.0	60.0	20.0	.0	1589.	887.	239.	0.	6017.	2107.	C.	1145.	476.	0.
0-99.9	157.5	200.4	417.8	.C	.0	.0	77.6	60.0	38.0	.0	1589.	887.	239.	0.	6017.	2107.	C.	1145.	476.	0.

'END OF PRINTOUT'

APPENDIX B: (9)


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**************************      **********************************************      **********************************************
* COMP-STAND 203324-0006 *      *FOREST 04   DISTRICT 06   SURVEY DATE 0879*      *INDV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *      * VARGEN PROGRAM USING NEW STAGE II        *      *SAMPLE POINTS    20  SAMPLE TREES    71  *
*PONDEROSA P.  SAWTIMBER *      *    ORIGIN DATE 1906   STAND ACRES  270   *      *BAF 20  FPS  3CC GP   C  SURVEY TYPE 4   *
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- PER ACRE MEASUREMENTS BY TREE CLASS -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREEDIN+)	39.	48.	87.	34.	121.	0.	121.	137.	3C.	36.
(BASLSIN+)	28.	20.	48.	4.	52.	0.	52.	1C2.	22.	12.
(CUBESIN+)	489.	286.	774.	32.	8C7.	0.	8C7.	95.	21.	176.
(SCRB9IN+)	1523.	696.	2219.	0.	2219.	0.	2219.	79.	17.	4C2.
(INT.9IN+)	1790.	821.	2611.	0.	2611.	0.	2611.	79.	17.	474.

- PER ACRE DEAD TOTAL STEM CUBIC VOL (5IN+) -

SOUND DEAD-STANDING	SOUND DEAD-DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	0.	51.	51.

- LODGEPOLE TREES (5IN+) -

OPEN-CONES	CLOSED-CONES	NO-CONES
0. %	0. %	0. %

- PER ACRE STAND AVERAGES -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	.0	0	0	0	0	.00	.00
OVR	8.9	37	66	106	52	806.72	2218.72
TOT	8.9	37	66	106	52	806.72	2218.72

- NUMBER OF STANDING SNAGS -
- PER ACRE -

HARD	SOFT
0	1

- PER ACRE STAND TABLE SUMMARIES -

PP (122,136-137)

DIAMETER	STEMS DES	STEMS ACC	STEMS SND CULL	STEMS RNT CULL	STEMS SALV	STEMS MORT	BASAL AREA DES	BASAL AREA ACC	BASAL AREA CULL	BASAL AREA SND DEAD	CUBIC VOLUME DES	CUBIC VOLUME ACC	CUBIC VOLUME CULL	CUBIC VOLUME SND DEAD	SCRIBNER VOLUME DES	SCRIBNER VOLUME ACC	SCRIBNER VOLUME SND DEAD	LOWR STM CUBIC DES	LOWR STM CUBIC ACC	LOWR STM CUBIC SND DEAD
0- .9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1- 2.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3- 4.9	.0	.0	15.0	.0	.0	.0	.0	.0	1.3	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5- 6.9	.0	26.2	15.5	.0	.0	.0	.0	6.0	3.0	.0	0.	58.	22.	0.	0.	0.	0.	0.	0.	0.
7- 8.9	13.9	9.7	.0	3.4	.0	.0	5.0	3.0	1.0	.0	72.	36.	11.	0.	106.	74.	0.	0.	0.	0.
9-10.9	1.8	3.9	.0	.0	.0	.0	1.0	2.0	.0	.0	13.	33.	0.	0.	30.	83.	0.	11.	28.	0.
11-12.9	18.7	4.0	.0	.0	.0	.0	14.0	3.0	.0	.0	228.	42.	0.	0.	750.	128.	0.	198.	36.	0.
13-14.9	1.8	1.8	.0	.0	.0	.0	2.0	2.0	.0	.0	42.	40.	0.	0.	170.	157.	0.	37.	35.	0.
15-16.9	.8	1.6	.0	.0	.0	.0	1.0	2.0	.0	.0	19.	38.	0.	0.	75.	153.	0.	16.	33.	0.
17-18.9	1.2	.6	.0	.0	.0	.0	2.0	1.0	.0	.0	42.	19.	0.	0.	182.	82.	0.	37.	17.	0.
19-20.9	.0	.4	.0	.0	.0	.0	.0	1.0	.0	.0	0.	21.	0.	0.	0.	93.	0.	0.	18.	0.
21-22.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23-24.9	.3	.0	.0	.0	.0	.0	1.0	.0	.0	.0	24.	0.	0.	0.	102.	0.	0.	22.	0.	0.
25-26.9	.3	.0	.0	.0	.0	.0	1.0	.0	.0	.0	22.	0.	0.	0.	98.	0.	0.	21.	0.	0.
27-28.9	.2	.0	.0	.0	.0	.0	1.0	.0	.0	.0	26.	0.	0.	0.	116.	0.	0.	24.	0.	0.
29-30.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31-99.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0- 4.9	.0	.0	15.0	.0	.0	.0	.0	.0	1.3	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5-99.9	39.1	48.3	15.5	3.4	.0	.0	28.0	20.0	4.0	.0	489.	286.	32.	0.	1629.	770.	0.	366.	167.	0.
0-99.9	39.1	48.3	30.5	3.4	.0	.0	28.0	20.0	5.3	.0	489.	286.	32.	0.	1629.	770.	0.	366.	167.	0.

'END OF PRINTOUT'

STAGE II STAND ANALYSIS UNCOMPAHGRE LOADC4 U0406UPDAT DATE 121784 PAGE 2

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**************************        ******************************************        ******************************************
* COMP-STAND 203325-0010 *        *FOREST 04   DISTRICT 06   SURVEY DATE 0783*        *INDV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *        * VARGEN PROGRAM USING NEW STAGE II       *        *SAMPLE POINTS    10  SAMPLE TREES    39  *
*PONDEROSA P.  SAWTIMBER *        *    ORIGIN DATE 1916   STAND ACRES   94   *        *BAF 20  FPS  3CC GP   0  SURVEY TYPE 4   *
**************************        ******************************************        ******************************************
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- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREEGIN+)	89.	8.	97.	0.	97.	0.	97.	82.	25.	26.
(BASLSIN+)	46.	8.	54.	0.	54.	0.	54.	58.	17.	10.
(CUBESIN+)	755.	134.	889.	0.	889.	0.	889.	63.	19.	184.
(SCRB9IN+)	2601.	493.	3094.	0.	3094.	0.	3094.	72.	21.	728.
(INT.9IN+)	3051.	579.	3631.	0.	3631.	0.	3631.	71.	21.	851.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	-DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	0.	0.	0.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NC-CONES
0. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	.5	2	6	30	0	.00	.00
OVR	11.8	41	57	67	54	889.24	3093.86
TOT	11.8	41	57	67	54	889.24	3093.86

- N U M B E R O F S T A N D I N G S N A G S -
- P E R A C R E -

HARD	SOFT
0	0

- P E R A C R E S T A N D T A B L E 'S U M M A R I E S -

PP (122,136-137)

DIAMETER	STEMS DES	STEMS ACC	STEMS SND CULL	STEMS RNT CULL	STEMS SALV	STEMS MORT	BASAL AREA DES	BASAL AREA ACC	BASAL AREA CULL	BASAL AREA SND DEAD	CUBIC VOLUME DES	CUBIC VOLUME ACC	CUBIC VOLUME CULL	CUBIC VOLUME SND DEAD	SCRIBNER VOLUME DES	SCRIBNER VOLUME ACC	SCRIBNER VOLUME SND DEAD	LOWR STM CUBIC DES	LOWR STM CUBIC ACC	LOWR STM CUBIC SND DEAD
0- .9	30.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1- 2.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3- 4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5- 6.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
7- 8.9	17.6	.0	.0	.0	.0	.0	6.0	.0	.0	.0	55.	0.	0.	0.	134.	0.	0.	0.	0.	0.
9-10.9	7.2	3.2	.0	.0	.0	.0	4.0	2.0	.0	.0	62.	30.	0.	0.	163.	83.	0.	55.	26.	0.
11-12.9	12.9	.0	.0	.0	.0	.0	10.0	.0	.0	.0	166.	0.	0.	0.	560.	0.	0.	147.	0.	0.
13-14.9	11.7	3.9	.0	.0	.0	.0	12.0	4.0	.0	.0	202.	65.	0.	0.	756.	243.	0.	178.	57.	0.
15-16.9	7.3	.0	.0	.0	.0	.0	10.0	.0	.0	.0	184.	0.	0.	0.	754.	0.	0.	163.	0.	0.
17-18.9	1.2	1.2	.0	.0	.0	.0	2.0	2.0	.0	.0	45.	39.	0.	0.	197.	167.	0.	40.	35.	0.
19-20.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21-22.9	.7	.0	.0	.0	.0	.0	2.0	.0	.0	.0	40.	0.	0.	0.	172.	0.	0.	38.	0.	0.
23-24.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25-26.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27-28.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29-30.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31-99.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0- 4.9	30.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5-99.9	58.6	8.3	.0	.0	.0	.0	46.0	8.0	.0	.0	755.	134.	0.	0.	2735.	493.	0.	621.	118.	0.
0-99.9	88.6	8.3	.0	.0	.0	.0	46.0	8.0	.0	.0	755.	134.	0.	0.	2735.	493.	0.	621.	118.	0.

'END OF PRINTOUT'

STAGE II STAND ANALYSIS UNCOMPAHGRE LCADC4 U0406UPDAT DATE 121784 PAGE 6

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**************************          ********************************************          ********************************************
* COMP-STAND 203325-0012 *          *FOREST 04   DISTRICT 06   SURVEY DATE 0783*          *INDV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *          * VARGEN PROGRAM USING NEW STAGE II       *          *SAMPLE POINTS     6  SAMPLE TREES    53  *
*PONDEROSA P.  SAWTIMBER *          *    ORIGIN DATE 1916   STAND ACRES   66   *          *BAF 10  FPS  3CC GP   0  SURVEY TYPE 3   *
**************************          ********************************************          ********************************************
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- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREEOIN+)	83.	18.	101.	0.	101.	0.	101.	75.	29.	34.
(BASL5IN+)	62.	10.	72.	0.	72.	0.	72.	58.	23.	19.
(CUBE5IN+)	1076.	154.	1230.	0.	1230.	0.	1230.	72.	28.	398.
(SCRB9IN+)	3623.	468.	4091.	0.	4091.	0.	4091.	73.	29.	1350.
(INT.9IN+)	4295.	551.	4846.	0.	4846.	0.	4846.	73.	28.	1588.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	0.	0.	0.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NC-CONES
0. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	.0	0	0	0	0	.00	.00
OVR	11.1	44	67	101	72	1230.26	4090.83
TOT	11.1	44	67	101	72	1230.26	4090.83

- N U M B E R O F S T A N D I N G S N A G S -
- P E R A C R E -

HARD	SOFT
0	0

- P E R A C R E S T A N D T A B L E 'S U M M A R I E S -

PP (122,136-137)

	STEMS						BASAL AREA				CUBIC VOLUME				SCRIBNER VOLUME			LOWR STM CUBIC		
DIAMETER	DES	ACC	SND CULL	RNT CULL	SALV	MORT	DES	ACC	CULL	SND DEAD	DES	ACC	CULL	SND DEAD	DES	ACC	SND DEAD	DES	ACC	SND DEAD
0- .9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1- 2.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
3- 4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5- 6.9	7.2	7.0	.0	.0	.0	.0	1.7	1.7	.0	.0	16.	18.	0.	0.	0.	0.	0.	0.	0.	0.
7- 8.9	4.1	.0	.0	.0	.0	.0	1.7	.0	.0	.0	32.	0.	0.	0.	80.	0.	0.	0.	0.	0.
9-10.9	32.4	6.4	.0	.0	.0	.0	18.3	3.3	.0	.0	297.	31.	0.	0.	821.	54.	0.	261.	26.	0.
11-12.9	12.9	1.9	.0	.0	.0	.0	10.0	1.7	.0	.0	189.	35.	0.	0.	670.	136.	0.	166.	31.	0.
13-14.9	17.9	3.1	.0	.0	.0	.0	18.3	3.3	.0	.0	320.	70.	0.	0.	1212.	278.	0.	281.	62.	0.
15-16.9	7.5	.0	.0	.0	.0	.0	10.0	.0	.0	.0	183.	0.	0.	0.	768.	0.	0.	167.	0.	0.
17-18.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
19-20.9	.8	.0	.0	.0	.0	.0	1.7	.0	.0	.0	35.	0.	0.	0.	152.	0.	0.	31.	0.	0.
21-22.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
23-24.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
25-26.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
27-28.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29-30.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31-99.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0- 4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
5-99.9	82.8	18.4	.0	.0	.0	.0	61.7	10.0	.0	.0	1076.	154.	0.	0.	3703.	468.	0.	906.	119.	0.
0-99.9	82.8	18.4	.0	.0	.0	.0	61.7	10.0	.0	.0	1076.	154.	0.	0.	3703.	468.	0.	906.	119.	0.

'END OF PRINTOUT'

STAGE II STAND ANALYSIS UNCOMPAHGRE LCADC4 U0406UPDAT DATE 121784 PAGE 10

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**************************          ********************************************          ******************************************
* COMP-STAND 203325-0020 *          *FCREST 04   DISTRICT 06   SURVEY DATE 0783*          *INDV RUN   NET MERCH FACTORS  PAGE TYPE 1*
*      SINGLE STAND      *          * VARGEN PROGRAM USING NEW STAGE II        *          *SAMPLE POINTS     8  SAMPLE TREES    51  *
*PONDEROSA P.  SAWTIMBER *          *    ORIGIN DATE 1905   STAND ACRES   70   *          *BAF 10  FPS  300 GP   0  SURVEY TYPE 4   *
**************************          ********************************************          ******************************************
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- P E R A C R E M E A S U R E M E N T S B Y T R E E C L A S S -

MEASUREMENT	DESIRABLE	ACCEPTABLE	GROWINGSTK	CULL	LIVE	SND DEAD	TOTAL	CV%(TOTAL)	SE%(TOTAL)	70%CI(TOTL)
(TREE0IN+)	53.	7.	60.	0.	60.	0.	60.	111.	37.	25.
(BASL5IN+)	47.	8.	55.	0.	55.	0.	55.	69.	23.	14.
(CUBE5IN+)	917.	147.	1064.	0.	1064.	0.	1064.	72.	24.	287.
(SCRB9IN+)	3390.	574.	3964.	0.	3964.	0.	3964.	76.	25.	1116.
(INT.9IN+)	3922.	665.	4587.	0.	4587.	0.	4587.	75.	25.	1273.

- P E R A C R E D E A D T O T A L S T E M C U B I C V O L (5IN+) -

SOUND DEAD-STANDING	SOUND DEAD-DOWN	NONSOUND DEAD-STANDING	TOTAL
0.	C.	0.	C.

- L O D G E P O L E T R E E S (5IN+) -

OPEN-CONES	CLOSED-CONES	NC-CONES
0. %	0. %	0. %

- P E R A C R E S T A N D A V E R A G E S -

STORY	DBH	HEIGHT	AGE	STEMS	BA	CUBIC(5IN+)	SCRIB(9IN+)
UND	.0	0	0	0	0	.00	.00
OVR	12.3	46	73	60	55	1063.85	3964.14
TOT	12.3	46	73	60	55	1063.85	3964.14

- N U M B E R O F S T A N D I N G S N A G S -
- P E R A C R E -

HARD	SOFT
0	0

- P E R A C R E S T A N D T A B L E S U M M A R I E S -

PP (122,136-137)

DIAMETER	STEMS DES	ACC	SND CULL	RNT CULL	SALV	MORT	BASAL AREA DES	ACC	CULL	SND DEAD	CUBIC VOLUME DES	ACC	CULL	SND DEAD	SCRIBNER VOLUME DES	ACC	SND DEAD	LOWR STM CUBIC DES	ACC	SND DEAD
0- .9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	C.	0.	0.	C.	C.
1- 2.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	C.	0.	0.	0.	0.	0.	0.	C.
3- 4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	C.	0.	0.	0.	0.	0.	C.	C.
5- 6.9	5.8	.0	.0	.0	.0	.0	1.3	.0	.0	.0	12.	0.	0.	0.	0.	0.	0.	0.	C.	C.
7- 8.9	9.6	.0	.0	.0	.0	.0	3.8	.0	.0	.0	49.	0.	0.	0.	95.	C.	0.	0.	0.	C.
9-10.9	10.7	1.9	.0	.0	.0	.0	6.3	1.3	.0	.0	99.	22.	0.	0.	275.	70.	0.	87.	19.	C.
11-12.9	7.6	1.6	.0	.0	.0	.0	6.3	1.3	.0	.0	121.	24.	C.	0.	442.	83.	0.	106.	21.	C.
13-14.9	7.2	1.2	.0	.0	.0	.0	7.5	1.3	.0	.0	142.	21.	0.	0.	554.	81.	0.	126.	19.	0.
15-16.9	4.6	1.0	.0	.0	.0	.0	6.3	1.3	.0	.0	123.	23.	0.	0.	509.	94.	0.	108.	20.	C.
17-18.9	3.7	.7	.0	.0	.0	.0	6.3	1.3	.0	.0	127.	19.	C.	0.	548.	79.	0.	112.	17.	0.
19-20.9	1.2	.0	.0	.0	.0	.0	2.5	.0	.0	.0	62.	0.	C.	0.	280.	C.	0.	55.	0.	C.
21-22.9	1.4	.0	.0	.0	.0	.0	3.8	.0	.0	.0	92.	0.	C.	0.	394.	0.	0.	85.	C.	C.
23-24.9	.8	.0	.0	.0	.0	.0	2.5	.0	.0	.0	55.	0.	C.	0.	236.	0.	C.	51.	0.	C.
25-26.9	.4	.0	.0	.0	.0	.0	1.3	.0	.0	.0	35.	0.	0.	0.	153.	0.	0.	32.	0.	0.
27-28.9	.0	.3	.0	.0	.0	.0	.0	1.3	.0	.0	0.	38.	C.	0.	0.	167.	0.	0.	35.	0.
29-30.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	C.
31-99.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	C.	0.	0.	0.	0.	0.	0.	C.
0- 4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0.	0.	C.	0.	0.	C.	0.	0.	C.	C.
5-99.9	53.0	6.8	.0	.0	.0	.0	47.5	7.5	.0	.0	917.	147.	C.	0.	3485.	574.	0.	762.	131.	0.
0-99.9	53.0	6.8	.0	.0	.0	.0	47.5	7.5	.0	.0	917.	147.	0.	0.	3485.	574.	0.	762.	131.	C.

'END OF PRINTOUT'

APPENDIX C:

Predicted Tree Loss by Stand[1/]

STAND	PERCENT	TREES/ACRE
203309 -0004	29.3	23.1
-0005	46.6	49.3
-0006	21.5	62.1
-0007	11.0	18.5
-0008	33.2	3.9
203310 -0004	13.1	8.7
203319 -0015	15.5	24.1
-0018	13.3	47.6
203324 -0006	7.6	6.6
203325 -0010	22.7	22.0
-0012	62.6	63.3
-0020	36.3	21.7
Averages	26.1%	29.2 T/A

1/ Lessard, Gene: Factors Affecting Ponderosa Pine Stand Susceptibility to Mountain Pine Beetle in the Black Hills 1981, USDA Forest Service. Forest Pest Management, Technical Report R2-26. 16 pp.